

Heartworm Basics and Prevention: Prevention is the Best Medicine

Every summer the news media buzzes with stories about the transmission of disease to humans by pesky and annoying mosquitoes. It should come as no surprise that these insects are more than just a nuisance to us humans, but are a serious health risk to our furry and beloved pets.



Heartworm is difficult to treat and can be a potentially fatal disease transmitted by mosquitoes to dogs and cats. This is why it is much easier and more effective to avoid the problem altogether. As a pet owner, you are likely familiar with the importance of heartworm prevention. Before we reinforce the things you should know about prevention, let's briefly explore this condition, how it occurs, typical symptoms, and what can be done to treat the infection.

What is heartworm?

Heartworms, *Dirofilaria immitis*, are found in dogs and cats and spend their adult life in the blood vessels connecting the heart and lungs and in more advanced cases inside the heart. So some may ask, "how do they get there?" The heartworm disease cycle is fed by the activity of mosquitoes. The adult heartworms lay very tiny larvae called microfilariae, which travel throughout the bloodstream. When a mosquito sucks blood from an infected animal and then bites its next victim the larvae are transmitted through the skin. These larvae eventually make their way to the chambers of the heart or lungs where they grow into adults. They grow, some up to 10-12 inches in length, and can eventually wreak havoc on your pet's organs.



Symptoms

Heartworm disease can be silent in the early stages and when left untreated can be fatal. While heartworm affects both dogs and cats, it is far more common in dogs. It may take months before your pet will show any sign of symptoms. Unlike dogs, cats can show signs of breathing problems even with only 1-2 adult heartworms surviving in their lungs.

Symptoms in dogs may vary but most commonly include: breathing difficulties, coughing, reduced appetite and weight loss and lethargy. These symptoms may mimic other conditions, and would likely lead you to your primary care veterinarian. Similarly, symptoms in cats are non-specific and include vomiting, gagging, difficulty or rapid breathing, lethargy and weight loss. Signs associated with the first stage of heartworm disease can often be mistaken for feline asthma or allergic bronchitis.

General practitioners are very familiar with what to look for and it is part of the annual exam. As long as you've been diligent with heartworm preventives, you will have little to worry about.

Treatment

Most cases of heartworm, with the exception of very advanced infections, can be effectively treated in dogs. It is a complicated and expensive process that will require a series of treatments over a period of a couple months. Adult heartworms in dogs are killed using a drug called an adulticide that is injected into the muscle. Treatment may be administered on an outpatient basis, but hospitalization is often recommended. During the recovery period, you will need to limit your dog's physical exercise to leash walking. This will reduce the chance that blood flow through the lungs would become blocked by dead worms. Preventive medications are also administered to avoid heartworm reinfection and to eliminate any larvae that may be present.

Treatment continued on back side

Treatment continued from front side

Currently, there are no products in the United States approved for the treatment of heartworm infection in cats, so disease prevention is critical. A cat's immune system can respond to heartworms better than dogs and are often able to eliminate the infection on their own. Unfortunately, they may develop complications as the dead worms are being cleared by the body, which can result in a life-threatening shock reaction. Veterinarians will often attempt to treat an infected cat with supportive therapy measures to limit this reaction.

Prevention

The bottom line is that prevention is much easier than the treatment and includes:

Reducing exposure to mosquitoes

While you may be able to limit the risk by keeping your pet inside in the late afternoon and evening, we all know that preventing mosquito bites is not entirely possible. Spraying the yard and removing standing water can help, but again will not completely eliminate the threat.

Using Preventives

Heartworm preventive therapy is safe, easy and inexpensive and when administered properly can be extremely effective. There are a variety of options for preventing heartworm infection in both dogs and cats, including:

- Oral pill or tablet (ivermectin and milbemycin) (taken monthly)
- Topical liquid that you squeeze from a tube onto the pet's back (applied monthly)
- Injectable (six-month product for dogs only)

Heartworm preventatives work to kill only the heartworm larvae that have infected the dog within the previous one to two months. Any larvae that have been in your dog longer are more likely to survive the treatment and go on to develop into adult worms that will require adulticide treatment (discussed above). Your veterinarian will complete a blood test to confirm that your pet is heartworm-free before he or she will write a prescription for heartworm preventive medication. Many heartworm preventives can cause illness if given to a dog with larvae in the bloodstream.

We recommend that preventive medication be given year-round. Some may think that they do not need do this in the winter because there are no mosquitoes. If you choose to discontinue preventives in the winter, you need to be very vigilant about remembering to restart the preventive therapy. In this case, treatment should be started one month before the mosquito season and continue for one month beyond the first frost.

Performing Routine Heartworm Testing

For dogs, a prevention program should be started at 6 to 8 weeks of age. If not started at an early age, the American Heartworm Society (AHS) recommends that all adult dogs be tested before being started on a heartworm preventive for the first time. In addition, all dogs should be tested annually for heartworm infection. This antigen test should be repeated annually or as frequently as your veterinarian recommends, even if the dog is on a heartworm prevention program.

Similarly in cats, it is recommended that heartworm preventives be started before the kitten reaches 9 weeks of age. And like with dogs, cats over 6 months old should be tested for heartworms prior to starting prevention, and annually thereafter.

By keeping as many pets free of heartworm disease, we will take them out of the host population and reduce the risk of disease in the overall population. Preventives are worth every dollar spent when you consider what it will cost to treat your beloved pet if infected -- not to mention the ultimate risk of losing your pet. For more information on heartworm you may consult the reference sources provided below or your primary care veterinarian.

Reference Sources:

FDA Animal and Veterinary

<http://www.fda.gov/animalveterinary/resourcesforyou/animalhealthliteracy/ucm188470.htm>

American Heartworm Society

<http://www.heartwormsociety.org/pet-owner-resources/heartworm.html#treatment>

WebMD: Healthy Pets

<http://pets.webmd.com/dogs/guide/heartworm-prevention-medicine-dogs>

Dr. Fosters and Smith Pet Education

<http://www.peteducation.com/>